ESS

VIESMANN Group

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CHP accessory range

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Imprint

Subject to technical modifications

Constant development may lead to minor deviations in the illustrations, functional steps and specifications from those described/shown.

Updating your documentation

Please let us know if you have any suggestions which would improve our documentation, or if you have noticed any errors.

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Overview of accessories for natural gas CHP modules

CHP compact module VITOBLOC 200		EM-18/36*	EM-50/81*	EM-70/115*	EM-140/207*	Page
	ESS / internal	700-02-0020	700-02-0050	700-02-0070	700-02-0140	
	Art. no.	**74 111 44**	**74 111 46**	**74 111 48**	**74 111 51**	
Electrical output Thermal output Fuel usage incl. 1) Set of elastic connections, incl. 2) Calibrated electricity meter		18 kW 36 kW 56 kW with 1-2	50 kW 81 kW 145 kW with 1-2	70 kW 115 kW 204 kW with 1-2	140 kW 207 kW 384 kW with 1-2	
2. Transport + installation		**EM-18/36**	**EM-50/81**	**EM-70/115**	**EM-140/207**	**9**
2.2.1 Lifting eyes (unloading in export destinations)	ESS / internal		710-00-0061	710-00-0061	710-00-0061	10
	Art. no.		**74 392 50**	**74 392 50**	**74 392 50**	
2.2.2 Additional transport brackets for horizontal transportation	ESS / internal		710-00-0041	710-00-0041	710-00-0042	11
	Art. no.		**74 177 53**	**74 177 53**	**74 177 54**	
2.2.3 Delivery in sections	ESS / internal		900-00-0101	900-00-0101	900-00-0102	12
	Art. no.		**70 007 81**	**70 007 81**	**70 007 82**	
2.3.1 Silencer hood and temperature-dependent extract fan	ESS / internal	standard	standard	standard	standard	13
	Art. no.	equipment level	equipment level	equipment level	equipment level	
2.3.2 Plinth	ESS / internal	710-00-0063	710-00-0063	710-00-0063	710-00-0064	14
	Art. no.	**74 392 51**	**74 392 51**	**74 392 51**	**74 392 52**	
3. Gas		**EM-18/36**	**EM-50/81**	**EM-70/115**	**EM-140/207**	**15**
3.1 Gas tightness test	ESS / internal	710-00-0052	710-00-0052	710-00-0052	standard	15
	Art. no.	**74 111 68**	**74 111 68**	**74 111 68**	equipment level	
3.2 Natural gas knocking monitoring	ESS / internal		710-00-0050	710-00-0050	710-00-0050	15
	Art. no.		**74 177 55**	**74 177 55**	**74 177 55**	
4. Exhaust gas		**EM-18/36**	**EM-50/81**	**EM-70/115**	**EM-140/207**	**16**
4.1. Exhaust silencer DD	ESS / internal	710-00-0065	710-00-0066	710-00-0066	710-00-0067	16
	Art. no.	**74 392 53**	**74 392 54**	**74 392 54**	**74 392 55**	
4.1. Exhaust silencer DD, pack 2 pce	ESS / internal					16
	Art. no.					
5. Heating		**EM-18/36**	**EM-50/81**	**EM-70/115**	**EM-140/207**	**18**
5.1 Higher heating water return temperatures 90/75 °C	ESS / internal		710-00-0035	710-00-0035	710-00-0036	18
	Art. no.		**74 177 49**	**75 177 49**	**74 177 50**	
6. Ventilation		**EM-18/36**	**EM-50/81**	**EM-70/115**	**EM-140/207**	**20**
6.1 Ventilation air via silencer hood	ESS / internal		710-00-0046	710-00-0046	710-00-0047	20
	Art. no.		**74 111 94**	**74 111 94**	**74 111 95**	
6.2 (Extract) fan box on silencer hood	ESS / internal		710-00-0048	710-00-0048	710-00-0049	20
	Art. no.		**74 111 96**	**74 111 96**	**74 111 97**	
6.3 Recirculating air damper (on request factory-fitted to fan box)	ESS / internal	710-00-0030	710-00-0031	710-00-0031	710-00-0032	21
	Art. no.	**74 111 75**	**74 111 76**	**74 111 76**	**74 111 77**	
7. Electronics		**EM-18/36**	**EM-50/81**	**EM-70/115**	**EM-140/207**	**24**
7.1 Data BUS systems / interface (gateway)* (either LON BUS, MOD BUS, CanOpen Bus or ProfiBus DP)	ESS / internal	710-00-0054	710-00-0054	710-00-0054	710-00-0054	24
	Art. no.	**74 112 01**	**74 112 01**	**74 112 01**	**74 112 01**	
7.2.1 Equipment level for operation to VDE 0108	ESS / internal		710-00-0055	710-00-0055	710-00-0055	24
	Art. no.		**74 111 79**	**74 111 79**	**74 111 79**	
7.2.2 Uninterruptible reverse synchronisation after emergency power mode	ESS / internal	710-00-0057	710-00-0057	710-00-0057	710-00-0057	25
	Art. no.	**74 112 04**	**74 112 04**	**74 112 04**	**74 112 04**	
7.3.1 Telecontrol LIGHT for single module systems* (not released for export!)	ESS / internal	710-00-0021	710-00-0021	710-00-0021	710-00-0021	26
	Art. no.	**74 111 90**	**74 111 90**	**74 111 90**	**74 111 90**	
7.3.2 Telecontrol CLASSIC for single module systems* (for export on request!)	ESS / internal	710-00-0022	710-00-0022	710-00-0022	710-00-0022	27
	Art. no.	**74 111 87**	**74 111 87**	**74 111 87**	**74 111 87**	
7.3.3 Telecontrol EXCLUSIVE* (for export on request!)	ESS / internal	710-00-0023	710-00-0023	710-00-0023	710-00-0023	28
	Art. no.	**74 111 89**	**74 111 89**	**74 111 89**	**74 111 89**	
7.3.4 Telecontrol GPRS for single module systems* (customer mobile phone contract + annual server charges) (not released for export!)	ESS / internal	710-00-0059	710-00-0059	710-00-0059	710-00-0059	29
	Art. no.	**74 177 56**	**74 177 56**	**74 177 56**	**74 177 56**	
7.4 Management system for multi-module management MMM Basis* (additional options on request)	ESS / internal	710-00-0020	710-00-0020	710-00-0020	710-00-0020	30
	Art. no.	**74 111 85**	**74 111 85**	**74 111 85**	**74 111 85**	
7.5.1 Cylinder level control unit SFR*	ESS / internal	710-00-0060	710-00-0060	710-00-0060	710-00-0060	33
	Art. no.	**74 245 55**	**74 245 55**	**74 245 55**	**74 245 55**	
7.5.2 Load controller for 1 module*	ESS / internal		710-00-0053	710-00-0053	710-00-0053	34
	Art. no.		**74 112 05**	**74 112 05**	**74 112 05**	
8. Service + training		**EM-18/36**	**EM-50/81**	**EM-70/115**	**EM-140/207**	**35**
8.1.1 Commissioning (Germany) (in other countries, subject to costs incurred plus travelling expenses)	ESS / internal	900-00-0003	900-00-0003	900-00-0003	900-00-0003	35
	Art. no.	**74 277 68**	**74 277 68**	**74 277 68**	**74 277 68**	
8.1.2 Lubricant TANK initial fill	ESS / internal	710-00-0007	710-00-0010	710-00-0010	710-00-0010	36
	Art. no.	**70 000 71**	**70 000 72**	**70 000 72**	**70 000 72**	
8.1.3 Additional 8 h supervised test run in conjunction with commissioning	ESS / internal	900-00-0011	900-00-0011	900-00-0011	900-00-0011	37
	Art. no.	**70 007 62**	**70 007 62**	**70 007 62**	**70 007 62**	
8.1.4 Order processing support for installation inspection in Germany	ESS / internal	900-00-0100	900-00-0100	900-00-0100	900-00-0100	37
	Art. no.	**70 007 80**	**70 007 80**	**70 007 80**	**70 007 80**	
8.1.5 Warranty preservation after 4 weeks each (in Germany)	ESS / internal	900-00-0010	900-00-0010	900-00-0010	900-00-0010	37
	Art. no.	**70 007 79**	**70 007 79**	**70 007 79**	**70 007 79**	
8.2.1 Local operating instructions, plus travel expenses	ESS / internal	900-00-0006	900-00-0006	900-00-0006	900-00-0006	38
	Art. no.	**70 007 59**	**70 007 59**	**70 007 59**	**70 007 59**	
8.2.2 Operating instructions at manufacturing site (per participant)	ESS / internal	900-00-0007	900-00-0007	900-00-0007	900-00-0007	38
	Art. no.	**70 007 76**	**70 007 76**	**70 007 76**	**70 007 76**	

* More detailed specifications are available for these articles.

Subject to changes due to technical improvements

ESS Energie Systeme & Service GmbH

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Overview of accessories for natural gas CHP modules

CHP compact module VITOBLOC 200		EM-199/263*	EM-199/293*	EM-238/363*	EM-363/498*	EM-401/549*	Page
	ESS / internal	700-02-1950	700-02-1980	700-02-0200	700-02-4080	700-02-4050	
	Art. no.	**74 111 53**	**74 111 55**	**74 111 52**	**74 243 98**	**74 243 99**	
Electrical output Thermal output Fuel usage incl. 1) Set of elastic connections, incl. 2) Calibrated electricity meter		199 kW 263+20 kW 538 kW with 1-2	199 kW 293 kW 553 kW with 1-2	238 kW 363 kW 667 kW with 1-2	363 kW 498 kW 960 kW with 1-2	401 kW 549+26 kW 1053 kW with 1-2	
2. Transport + installation		**EM-199/263**	**EM-199/293**	**EM-238/363**	**EM-363/498**	**EM-401/549**	**9**
2.2.1 Lifting eyes (unloading in export destinations)	ESS / internal	710-00-0062	710-00-0062	710-00-0062	710-00-0062	710-00-0062	10
	Art. no.	**74 177 48**	**74 177 48**	**74 177 48**	**74 177 48**	**74 177 48**	
2.2.2 Additional transport brackets for horizontal transportation	ESS / internal						11
	Art. no.						
2.2.3 Delivery in sections	ESS / internal						12
	Art. no.						
2.3.1 Silencer hood and temperature-dependent extract fan	ESS / internal	710-00-0080	710-00-0080	710-00-0080	710-00-0081	710-00-0081	13
	Art. no.	**74 392 92**	**74 392 92**	**74 392 92**	**74 392 93**	**74 392 93**	
2.3.2 Plinth	ESS / internal						14
	Art. no.						
3. Gas		**EM-199/263**	**EM-199/293**	**EM-238/363**	**EM-363/498**	**EM-401/549**	**15**
3.1 Gas tightness test	ESS / internal	standard	standard	standard	standard	standard	15
	Art. no.	equipment level	equipment level	equipment level	equipment level	equipment level	
3.2 Natural gas knocking monitoring	ESS / internal			710-00-0051			15
	Art. no.			**74 111 69**			
4. Exhaust gas		**EM-199/263**	**EM-199/293**	**EM-238/363**	**EM-363/498**	**EM-401/549**	**16**
4.1. Exhaust silencer DD	ESS / internal	710-00-0068	710-00-0068	710-00-0068	710-00-0069	710-00-0069	16
	Art. no.	**74 392 56**	**74 392 56**	**74 392 56**	**74 392 57**	**74 392 57**	
4.1. Exhaust silencer DD, pack 2 pce	ESS / internal	710-00-0070	710-00-0070	710-00-0070	710-00-0071	710-00-0071	16
	Art. no.	**74 392 58**	**74 392 58**	**74 392 58**	**74 392 59**	**74 392 59**	
5. Heating		**EM-199/263**	**EM-199/293**	**EM-238/363**	**EM-363/498**	**EM-401/549**	**18**
5.1 Higher heating water return temperatures 90/75 °C	ESS / internal			710-00-0037			18
	Art. no.			**74 177 51**			
6. Ventilation		**EM-199/263**	**EM-199/293**	**EM-238/363**	**EM-363/498**	**EM-401/549**	**20**
6.1 Ventilation air via silencer hood	ESS / internal	as standard	as standard		as standard	as standard	20
	Art. no.	prepared	prepared		prepared	prepared	
6.2 (Extract) fan box on silencer hood	ESS / internal						20
	Art. no.						
6.3 Recirculating air damper (on request factory-fitted to fan box)	ESS / internal	710-00-0033	710-00-0033	710-00-0033	710-00-0033	710-00-0033	21
	Art. no.	**74 111 78**	**74 111 78**	**74 111 78**	**74 111 78**	**74 111 78**	
7. Electronics		**EM-199/263**	**EM-199/293**	**EM-238/363**	**EM-363/498**	**EM-401/549**	**24**
7.1 Data BUS systems / interface (gateway)* (either LON BUS, MOD BUS, CanOpen Bus or ProfiBus DP)	ESS / internal	710-00-0054	710-00-0054	710-00-0054	710-00-0054	710-00-0054	24
	Art. no.	**74 112 01**	**74 112 01**	**74 112 01**	**74 112 01**	**74 112 01**	
7.2.1 Equipment level for operation to VDE 0108	ESS / internal			710-00-0056			24
	Art. no.			**74 111 80**			
7.2.2 Uninterruptible reverse synchronisation after emergency power mode	ESS / internal	710-00-0057	710-00-0057	710-00-0057	710-00-0057	710-00-0057	25
	Art. no.	**74 112 04**	**74 112 04**	**74 112 04**	**74 112 04**	**74 112 04**	
7.3.1 Telecontrol LIGHT for single module systems* (not released for export!)	ESS / internal	710-00-0021	710-00-0021	710-00-0021	710-00-0021	710-00-0021	26
	Art. no.	**74 111 90**	**74 111 90**	**74 111 90**	**74 111 90**	**74 111 90**	
7.3.2 Telecontrol CLASSIC for single module systems* (for export on request!)	ESS / internal	710-00-0022	710-00-0022	710-00-0022	710-00-0022	710-00-0022	27
	Art. no.	**74 111 87**	**74 111 87**	**74 111 87**	**74 111 87**	**74 111 87**	
7.3.3 Telecontrol EXCLUSIVE* (for export on request!)	ESS / internal	710-00-0023	710-00-0023	710-00-0023	710-00-0023	710-00-0023	28
	Art. no.	**74 111 89**	**74 111 89**	**74 111 89**	**74 111 89**	**74 111 89**	
7.3.4 Telecontrol GPRS for single module systems* (customer mobile phone contract + annual server charges) (not released for export!)	ESS / internal	710-00-0059	710-00-0059	710-00-0059	710-00-0059	710-00-0059	29
	Art. no.	**74 177 56**	**74 177 56**	**74 177 56**	**74 177 56**	**74 177 56**	
7.4 Management system for multi-module management MMM Basis* (additional options on request)	ESS / internal	710-00-0020	710-00-0020	710-00-0020	710-00-0020	710-00-0020	30
	Art. no.	**74 111 85**	**74 111 85**	**74 111 85**	**74 111 85**	**74 111 85**	
7.5.1 Cylinder level control unit SFR*	ESS / internal	710-00-0060	710-00-0060	710-00-0060	710-00-0060	710-00-0060	33
	Art. no.	**74 245 55**	**74 245 55**	**74 245 55**	**74 245 55**	**74 245 55**	
7.5.2 Load controller for 1 module*	ESS / internal	710-00-0053	710-00-0053	710-00-0053	710-00-0053	710-00-0053	34
	Art. no.	**74 112 05**	**74 112 05**	**74 112 05**	**74 112 05**	**74 112 05**	
8. Service + training		**EM-199/263**	**EM-199/293**	**EM-238/363**	**EM-363/498**	**EM-401/549**	**35**
8.1.1 Commissioning (Germany) (in other countries, subject to costs incurred plus travelling expenses)	ESS / internal	900-00-0004	900-00-0004	900-00-0004	900-00-0004	900-00-0004	35
	Art. no.	**74 277 69**	**74 277 69**	**74 277 69**	**74 277 69**	**74 277 69**	
8.1.2 Lubricant TANK initial fill	ESS / internal	710-00-0011	710-00-0011	710-00-0012	710-00-0011	710-00-0011	36
	Art. no.	**70 000 73**	**70 000 73**	**70 000 74**	**70 000 73**	**70 000 73**	
8.1.3 Additional 8 h supervised test run in conjunction with commissioning	ESS / internal	900-00-0011	900-00-0011	900-00-0011	900-00-0011	900-00-0011	37
	Art. no.	**70 007 62**	**70 007 62**	**70 007 62**	**70 007 62**	**70 007 62**	
8.1.4 Order processing support Installation inspection in Germany	ESS / internal	900-00-0100	900-00-0100	900-00-0100	900-00-0100	900-00-0100	37
	Art. no.	**70 007 80**	**70 007 80**	**70 007 80**	**70 007 80**	**70 007 80**	
8.1.5 Warranty preservation after 4 weeks each (in Germany)	ESS / internal	900-00-0010	900-00-0010	900-00-0010	900-00-0010	900-00-0010	37
	Art. no.	**70 007 79**	**70 007 79**	**70 007 79**	**70 007 79**	**70 007 79**	
8.2.1 Local operating instructions, plus travel expenses	ESS / internal	900-00-0006	900-00-0006	900-00-0006	900-00-0006	900-00-0006	38
	Art. no.	**70 007 59**	**70 007 59**	**70 007 59**	**70 007 59**	**70 007 59**	
8.2.2 Operating instructions at manufacturing site (per participant)	ESS / internal	900-00-0007	900-00-0007	900-00-0007	900-00-0007	900-00-0007	38
	Art. no.	**70 007 76**	**70 007 76**	**70 007 76**	**70 007 76**	**70 007 76**	

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* More detailed specifications are available for these articles.

Subject to changes due to technical improvements

ESS Energie Systeme & Service GmbH

Overview of accessories for biogas CHP modules

CHP compact module VITOBLOC 200		BM-36/66*	BM-55/88*	BM-98/150*	Page
	ESS / internal	700-02-0045	700-02-0065	700-02-0105	
	Art. no.	**74 111 45**	**74 111 47**	**74 111 49**	
Electrical output Thermal output Fuel usage incl. 1) Set of elastic connections, incl. 2) Calibrated electricity meter		36 kW 66 kW 122 kW with 1-2	55 kW 88 kW 165 kW with 1-2	98 kW 150 kW 291 kW with 1-2	
2. Transport + installation		**BM-36/66**	**BM-55/88**	**BM-98/150**	**9**
2.2.1 Lifting eyes (unloading in export destinations)	ESS / internal	710-00-0061	710-00-0061	710-00-0061	10
	Art. no.	**74 392 50**	**74 392 50**	**74 392 50**	
2.2.2 Additional transport brackets for horizontal transportation	ESS / internal	710-00-0041	710-00-0041	710-00-0042	11
	Art. no.	**74 177 53**	**74 177 53**	**74 177 54**	
2.2.3 Delivery in sections	ESS / internal	900-00-0101	900-00-0101	900-00-0102	12
	Art. no.	**70 007 81**	**70 007 81**	**70 007 82**	
2.3.1 Silencer hood and temperature-dependent extract fan	ESS / internal	standard	standard	standard	13
	Art. no.	equipment level	equipment level	equipment level	
2.3.2 Plinth	ESS / internal	710-00-0063	710-00-0063	710-00-0064	14
	Art. no.	**74 392 51**	**74 392 51**	**74 392 52**	
4. Exhaust gas		**BM-36/66**	**BM-55/88**	**BM-98/150**	**16**
4.1. Exhaust silencer DD	ESS / internal	710-00-0066	710-00-0066	710-00-0067	16
	Art. no.	**74 392 54**	**74 392 54**	**74 392 55**	
4.1. Exhaust silencer DD, pack 2 pce	ESS / internal				16
	Art. no.				
6. Ventilation		**BM-36/66**	**BM-55/88**	**BM-98/150**	**20**
6.1 Ventilation air via silencer hood	ESS / internal	710-00-0046	710-00-0046	710-00-0047	20
	Art. no.	**74 111 94**	**74 111 94**	**74 111 95**	
6.2 (Extract) fan box on silencer hood	ESS / internal	710-00-0048	710-00-0048	710-00-0049	20
	Art. no.	**74 111 96**	**74 111 96**	**74 111 97**	
7. Electronics		**BM-36/66**	**BM-55/88**	**BM-98/150**	**24**
7.1 Data BUS systems / interface (gateway)* (either LON BUS, MOD BUS, CanOpen Bus or ProfiBus DP)	ESS / internal	710-00-0054	710-00-0054	710-00-0054	24
	Art. no.	**74 112 01**	**74 112 01**	**74 112 01**	
7.2.2 Uninterruptible reverse synchronisation after emergency power mode	ESS / internal	710-00-0057	710-00-0057	710-00-0057	25
	Art. no.	**74 112 04**	**74 112 04**	**74 112 04**	
7.3.1 Telecontrol LIGHT for single module systems* (not released for export!)	ESS / internal	710-00-0021	710-00-0021	710-00-0021	26
	Art. no.	**74 111 90**	**74 111 90**	**74 111 90**	
7.3.2 Telecontrol CLASSIC for single module systems* (for export on request!)	ESS / internal	710-00-0022	710-00-0022	710-00-0022	27
	Art. no.	**74 111 87**	**74 111 87**	**74 111 87**	
7.3.3 Telecontrol EXCLUSIVE* (for export on request!)	ESS / internal	710-00-0023	710-00-0023	710-00-0023	28
	Art. no.	**74 111 89**	**74 111 89**	**74 111 89**	
7.3.4 Telecontrol GPRS for single module systems* (customer mobile phone contract + annual server charges) (not released for export!)	ESS / internal	710-00-0059	710-00-0059	710-00-0059	29
	Art. no.	**74 177 56**	**74 177 56**	**74 177 56**	
7.4 Management system for multi-module management MMM Basis* (additional options on request)	ESS / internal	710-00-0020	710-00-0020	710-00-0020	30
	Art. no.	**74 111 85**	**74 111 85**	**74 111 85**	
7.5.1 Cylinder level control unit SFR*	ESS / internal	710-00-0060	710-00-0060	710-00-0060	33
	Art. no.	**74 245 55**	**74 245 55**	**74 245 55**	
7.5.2 Load controller for 1 module*	ESS / internal	710-00-0053	710-00-0053	710-00-0053	34
	Art. no.	**74 112 05**	**74 112 05**	**74 112 05**	
8. Service + training		**BM-36/66**	**BM-55/88**	**BM-98/150**	**35**
8.1.1 Commissioning (Germany) (in other countries, subject to costs incurred plus travelling expenses)	ESS / internal	900-00-0005	900-00-0005	900-00-0005	35
	Art. no.	**70 007 63**	**70 007 63**	**70 007 63**	
8.1.2 Lubricant TANK initial fill	ESS / internal	710-00-0009	710-00-0009	710-00-0009	36
	Art. no.	**70 000 75**	**70 000 75**	**70 000 75**	
8.1.3 Additional 8 h supervised test run in conjunction with commissioning	ESS / internal	900-00-0011	900-00-0011	900-00-0011	37
	Art. no.	**70 007 62**	**70 007 62**	**70 007 62**	
8.1.4 Order processing support Installation inspection in Germany	ESS / internal	900-00-0100	900-00-0100	900-00-0100	37
	Art. no.	**70 007 80**	**70 007 80**	**70 007 80**	
8.1.5 Warranty preservation after 4 weeks each (in Germany)	ESS / internal	900-00-0010	900-00-0010	900-00-0010	37
	Art. no.	**70 007 79**	**70 007 79**	**70 007 79**	
8.2.1 Local operating instructions, plus travel expenses	ESS / internal	900-00-0006	900-00-0006	900-00-0006	38
	Art. no.	**70 007 59**	**70 007 59**	**70 007 59**	
8.2.2 Operating instructions at manufacturing site (per participant)	ESS / internal	900-00-0007	900-00-0007	900-00-0007	38
	Art. no.	**70 007 76**	**70 007 76**	**70 007 76**	

* More detailed specifications are available for these articles.

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Subject to changes due to technical improvements

ESS Energie Systeme & Service GmbH

Overview of accessories for biogas CHP modules

CHP compact module VITOBLOC 200		BM-123/177*	BM-190/238*	BM-366/437*	Page
	ESS / internal	700-02-0125	700-02-1955	700-02-4055	
	Art. no.	**74 111 50**	**74 111 54**	**74 392 62**	
Electrical output Thermal output Fuel usage incl. 1) Set of elastic connections, incl. 2) Calibrated electricity meter		123 kW 177 kW 343 kW with 1-2	190 kW 238+16 kW 493 kW with 1-2	366 kW 437+16 kW 960 kW with 1-2	
2. Transport + installation		**BM-123/177**	**BM-190/238**	**BM-366/437**	**9**
2.2.1 Lifting eyes (unloading in export destinations)	ESS / internal	710-00-0061	710-00-0062	710-00-0062	10
	Art. no.	**74 392 50**	**74 177 48**	**74 177 48**	
2.2.2 Additional transport brackets for horizontal transportation	ESS / internal	710-00-0042			11
	Art. no.	**74 177 54**			
2.2.3 Delivery in sections	ESS / internal	900-00-0102			12
	Art. no.	**70 007 82**			
2.3.1 Silencer hood and temperature-dependent extract fan	ESS / internal	standard	710-00-0080	710-00-0081	13
	Art. no.	equipment level	**74 392 92**	**74 392 93**	
2.3.2 Plinth	ESS / internal	710-00-0064			14
	Art. no.	**74 392 52**			
4. Exhaust gas		**BM-123/177**	**BM-190/238**	**BM-366/437**	**16**
4.1. Exhaust silencer DD	ESS / internal	710-00-0067	710-00-0068	710-00-0069	16
	Art. no.	**74 392 55**	**74 392 56**	**74 392 57**	
4.1. Exhaust silencer DD, pack 2 pce	ESS / internal		710-00-0070	710-00-0071	16
	Art. no.		**74 392 58**	**74 392 59**	
6. Ventilation		**BM-123/177**	**BM-190/238**	**BM-366/437**	**20**
6.1 Ventilation air via silencer hood	ESS / internal	710-00-0047	as standard	as standard	20
	Art. no.	**74 111 95**	**prepared**	**prepared**	
6.2 (Extract) fan box on silencer hood	ESS / internal	710-00-0049			20
	Art. no.	**74 111 97**			
7. Electronics		**BM-123/177**	**BM-190/238**	**BM-366/437**	**24**
7.1 Data BUS systems / interface (gateway)* (either LON BUS, MOD BUS, CanOpen Bus or ProfiBus DP)	ESS / internal	710-00-0054	710-00-0054	710-00-0054	24
	Art. no.	**74 112 01**	**74 112 01**	**74 112 01**	
7.2.2 Uninterruptible reverse synchronisation after emergency power mode	ESS / internal	710-00-0057	710-00-0057	710-00-0057	25
	Art. no.	**74 112 04**	**74 112 04**	**74 112 04**	
7.3.1 Telecontrol LIGHT for single module systems* (not released for export!)	ESS / internal	710-00-0021	710-00-0021	710-00-0021	26
	Art. no.	**74 111 90**	**74 111 90**	**74 111 90**	
7.3.2 Telecontrol CLASSIC for single module systems* (for export on request!)	ESS / internal	710-00-0022	710-00-0022	710-00-0022	27
	Art. no.	**74 111 87**	**74 111 87**	**74 111 87**	
7.3.3 Telecontrol EXCLUSIVE* (for export on request!)	ESS / internal	710-00-0023	710-00-0023	710-00-0023	28
	Art. no.	**74 111 89**	**74 111 89**	**74 111 89**	
7.3.4 Telecontrol GPRS for single module systems* (customer mobile phone contract + annual server charges) (not released for export!)	ESS / internal	710-00-0059	710-00-0059	710-00-0059	29
	Art. no.	**74 177 56**	**74 177 56**	**74 177 56**	
7.4 Management system for multi-module management MMM Basis* (additional options on request)	ESS / internal	710-00-0020	710-00-0020	710-00-0020	30
	Art. no.	**74 111 85**	**74 111 85**	**74 111 85**	
7.5.1 Cylinder level control unit SFR*	ESS / internal	710-00-0060	710-00-0060	710-00-0060	33
	Art. no.	**74 245 55**	**74 245 55**	**74 245 55**	
7.5.2 Load controller for 1 module*	ESS / internal	710-00-0053	710-00-0053	710-00-0053	34
	Art. no.	**74 112 05**	**74 112 05**	**74 112 05**	
8. Service + training		**BM-123/177**	**BM-190/238**	**BM-366/437**	**35**
8.1.1 Commissioning (Germany) (in other countries, subject to costs incurred plus travelling expenses)	ESS / internal	900-00-0005	900-00-0005	900-00-0005	35
	Art. no.	**70 007 63**	**70 007 63**	**70 007 63**	
8.1.2 Lubricant TANK initial fill	ESS / internal	710-00-0009	710-00-0011	710-00-0011	36
	Art. no.	**70 000 75**	**70 000 73**	**70 000 73**	
8.1.3 Additional 8 h supervised test run in conjunction with commissioning	ESS / internal	900-00-0011	900-00-0011	900-00-0011	37
	Art. no.	**70 007 62**	**70 007 62**	**70 007 62**	
8.1.4 Order processing support for installation inspection in Germany	ESS / internal	900-00-0100	900-00-0100	900-00-0100	37
	Art. no.	**70 007 80**	**70 007 80**	**70 007 80**	
8.1.5 Warranty preservation after 4 weeks each (in Germany)	ESS / internal	900-00-0010	900-00-0010	900-00-0010	37
	Art. no.	**70 007 79**	**70 007 79**	**70 007 79**	
8.2.1 Local operating instructions, plus travel expenses	ESS / internal	900-00-0006	900-00-0006	900-00-0006	38
	Art. no.	**70 007 59**	**70 007 59**	**70 007 59**	
8.2.2 Operating instructions at manufacturing site (per participant)	ESS / internal	900-00-0007	900-00-0007	900-00-0007	38
	Art. no.	**70 007 76**	**70 007 76**	**70 007 76**	

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* More detailed specifications are available for these articles.

Subject to changes due to technical improvements

ESS Energie Systeme & Service GmbH

1 Introduction

Note

This product range describes in detail all articles and services provided by ESS which are available through Viessmann Werke GmbH & Co. KG.

In addition, extra details from the Viessmann catalogue are included.

2 Transport and installation

2.1 Transport within Germany

Article number	CHP module type	Viessmann
	for all CHP module types	0000962

Scope of service

Delivery and unloading
ESS generally delivers from the Landsberg am Lech factory.
Transport from Landsberg am Lech should be arranged separately with a forwarder.
In Germany, Viessmann Logistik is commissioned by Viessmann Deutschland GmbH. Their HGVs are equipped with lifting eyes to unload CHP modules.

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2.2 Handling

2.2.1 Lifting eyes (unloading in export destinations)

Article number	CHP module type	ESS	Viessmann
	EM-50/81, EM-70/115, EM 140/207, BM-36/66, BM-55/88, BM-98/150, BM-123/177	710-00-0061	7439250
	EM-199/263, EM-199/293, EM-238/363, EM-363/498, EM-401/549, BM-190/238, BM-366/437	710-00-0062	7417748

Function

- For unloading and handling with a crane

Fig. 1 Transport of a CHP module with a crane using lifting eyes

Delivery

- 4 lifting eyes and 1 key per set
- Lifting eyes are attached to the exhaust outlet flange with cable ties

Note

- In Germany, the HGVs belonging to Viessmann Logistik are equipped with lifting eyes for unloading.
- Lifting eyes can be supplied free of charge with CHP module EM-18/36 if required. Please state when ordering!

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2.2.2 Additional transport brackets for horizontal transportation

Article number	CHP module type	ESS	Viessmann
	EM-50/81, EM-70/115, BM-36/66, BM-55/88	710-00-0041	7417753
	EM-140/207, BM-98/150, BM-123/177	710-00-0042	7417754

Scope of service

Additional transport brackets for laying the module on its long side for on-site handling plus an installation inspection, to be ordered separately (see section 8.1.3)

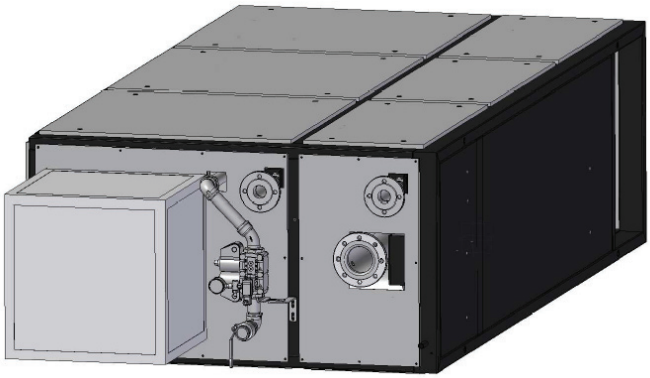

Fig. 2 Horizontal transportation

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2.2.3 Delivery in sections

Article number

CHP module type	ESS	Viessmann
EM-50/81, EM-70/115, BM-36/66, BM-55/88	900-00-0101	7000781
EM-140/207, BM-98/150, BM-123/177	900-00-0102	7000782

Function

The conditions at the installation location may make it necessary to handle the CHP module in sections.

If so, it is delivered in two sections:

1. Engine generator unit
2. Heat exchanger unit

	Engine generator unit		Heat exchanger unit	
Sectional delivery CHP module	**Weight in t**	**Dimensions (L x W x H) in mm**	**Weight in t**	**Dimensions (L x W x H) in mm**
EM-50/81 EM-70/115 BM-55/88	approx. 1.0	2000 x 800 x 1000	approx. 1.1	3000 x 900 x 1100
EM-140/207 BM-98/150 BM-123/177	approx. 1.5	2400 x 800 x 1200	approx. 2.1	3700 x 950 x 1200

Tab. 1 Sectional delivery of CHP module – dimensions and weights

Scope of service

The service provided is divided into the following three steps:

1. Dismantling the prepared CHP module at the ESS factory.
2. As a final step in the handling to be completed on site, the engine generator unit is positioned on the heat exchanger unit (adjusted accordingly) and secured. Suitable lifting gear (e.g. assembly crane, lifting pallet truck) for this purpose should be provided on site.
   For this step, at least 2 other people (e.g. from the transport staff) should be available to assist at no extra cost.
3. Re-assembling the prepared CHP module at the ESS factory.

Travel expenses and overnight accommodation for the 2 installers assigned to the job are included.

On-site tasks / requirements

- Additional costs incurred for the extra transport load floor
- Overall transportation
- All lifting gear required
- Additional costs that we incur through unavoidable delays during handling or re-assembling the CHP module

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2.3 Installation

2.3.1 Silencer hood and temperature-dependent fan

Article number	CHP module type	ESS	Viessmann
	EM-199/263, EM-199/293, BM-190/238, EM-238/363	710-00-0080	7439292
	EM-363/498, EM-401/549, BM-366/437	710-00-0081	7439293

Function

If installed in areas where noise emissions are critical, the CHP module can be equipped with a ventilated silencer hood, consisting of the silencer hood for the engine generator unit and the casing of the heat exchanger unit.

Version

- Sound insulation elements made of sheet steel, lined with combination elements made from bitumen board and highly absorbent flexible foam with additional surface coating; area in contact with hot parts lined with compound foam (300 kg/m^3) with additional aluminium lining.
- The 25 µm thin coating is largely resistant to petrol and motor oil splashes and easy to clean.
- The surface coating protects against mechanical damage and has outstanding ageing resistance.
- Fire characteristics in accordance with FMVSS 302 and DIN 75200.
- In the hot area, the insulation is made of mineral wool/glass fibre and a perforated plate cover.
- The silencer hood elements can be removed for maintenance.
- The support structure can be removed for modification work, in order to be able to work with lifting gear without hindrance.
- Fresh air inlet through louvres integrated into the side silencer hood casing. Combustion air inlet through separate air inlet on the roof casing.
- 1 runtime-controlled extract fan.
- In addition, 1 temperature-dependent extract fan to supply the CHP module with sufficient combustion air and cooling air at max. 500 Pa pressure for extract air duct.
- Average sound insulation of the hood approx. 20 dB.
- Flexible canvas flange to connect the downstream duct.

Delivery

As loose accessories or mounted on the CHP module

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2.3.2 Plinth

Article number	CHP module type	ESS	Viessmann
	EM-18/36, EM-50/81, EM-70/115, BM-36/66, BM-55/88	710-00-0063	7439251
	EM 140/207, BM-98/150, BM-123/177	710-00-0064	7439252

Function
To mount the CHP module in a higher position (sufficient fresh air inlet from below) for on-site integration of the exhaust condensate siphon loop/hydraulic seal

Version
- Stainless steel channel section
- Length x width x height 1100 /1200 mm x 260 mm x 90 mm

Delivery
As loose accessories

2.3.3 Flexible feet

Article number
on request

Function
With particularly critical foundations and wall bases (e.g. on gravel covers, ceilings with wooden joists), air-filled damper elements can significantly attenuate structure-borne noise resulting from the effects of resonance. The air dampers should be checked regularly on site for the correct filling pressure

Version

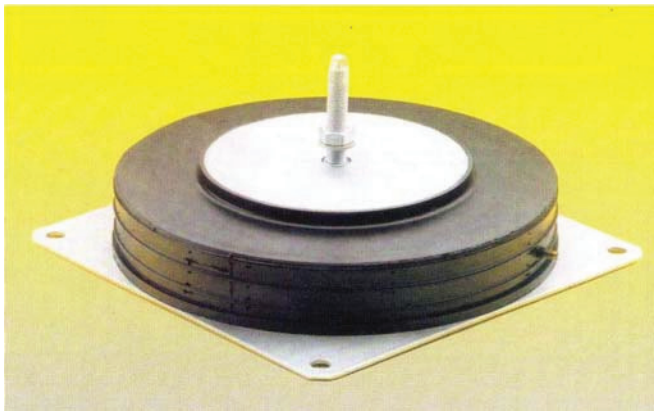

Fig. 3 Air-filled damper element

- Elastomer-metal connection with fitted floor plate
- Air chamber made from elastomer, reinforced with steel rings
- Air supply via car tyre valve

Delivery
As loose accessories

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3 Gas

3.1 Gas tightness test

Article number	CHP module type	ESS	Viessmann
	EM-18/36, EM-50/81, EM-70/115	710-00-0052	7411168

Version Tightness tester, including installation in the gas train or module control panel

Function The gas tightness tester consists of a pressure and monitoring PCB for installation in the gas train of the CHP module. It is suitable for gas trains with two safety valves and monitors the safety function of the valves following shutdown. The tester establishes any unacceptable leak in any of the gas valves and prevents the CHP module from starting up if there is a fault.

According to EN 746-2, a tightness test should be carried out from 1200 kW heating output and above. In DIN 33831-2 it is recommended from 390 kW and above.

Delivery Integrated into the CHP gas train

3.2 Natural gas knocking monitoring equipment

Article number	CHP module type	ESS	Viessmann
	EM-50/81, EM-70/115, EM-140/207	710-00-0050	7417755
	EM-238/363	710-00-0051	7411169

Version

- For natural gas with a methane count < 75
- With a methane count between 80 and 75, provide output reduction!
- Knocking control fitted in the module or module control panel

Function If the methane count of the fuel gas (not to be confused with the methane content!) is below the permissible level for the engine, after successful ignition the thermodynamic properties of the gas will cause an additional ignition of the air-gas mixture outside the standard combustion range. This results in significantly faster combustion with several flame fronts. Where these flame fronts meet, powerful pressure waves are created whose sound emissions are heard as knocking noises.

Knocking causes much greater wear and leads to engine damage; it should always be prevented.

For this purpose, the natural gas knocking monitoring equipment is provided, which reliably prevents knocking sounds as part of the CHP module control. If knocking persists, the output will decrease. If this measure is not successful either, the engine must be switched off.

Delivery

- For EM-50/81, EM-70/115, EM-140/207 in separate control panel
- For EM-238/363 integrated in the CHP module or module control panel

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4 Exhaust gas

4.1 Exhaust silencer

Article number

CHP module type	ESS	Viessmann
EM-18/36	710-00-0065	7439253
EM-50/81, EM-70/115, BM-36/66, BM-55/88	710-00-0066	7439254
EM-140/207, BM-98/150, BM-123/177	710-00-0067	7439255
EM-199/263, EM-199/293, EM-238/363, BM-190/238	710-00-0068	7439256
EM-363/498, EM-401/549, BM-366/437	710-00-0069	7439257
2 pce in set		
EM-199/263, EM-199/293, EM-238/363, BM-190/238	710-00-0070	7439258
EM-363/498, EM-401/549, BM-366/437	710-00-0071	7439259

Function

Reduction of low frequency combustion noise in the exhaust

Version

Reflection absorption exhaust silencer for integration in the exhaust pipe immediately downstream of the CHP module, comprising:

- Cylindrical, pressure-tested and gas-tight steel casing, with integral reinforcement profiles
- Reflection part on the inlet side and permanently fixed special circular silencing link, matched to the low frequency combustion noise emissions of the gas engine, segregated with bulkhead panels, lined with moisture-stabilised stainless steel needle felt and covered with 2 mm thick special perforated plate.
- Connectors on the inlet and outlet sides
- Drain connection in the reflection floor

Installation

- Horizontal or vertical installation
- The condensate connector must be located at the lowest point to ensure correct draining of the condensate.

Delivery

- Delivery not unloaded, insulated
- As loose accessories for on-site installation
- Ensure correct structure-borne noise insulation through suitable installation clamps!

Note

- Internal primary silencers integrated in modules EM-50/81, EM-70/115, EM-140/207.
- Upstream of the stainless steel silencer, there must not be any black pipe in mild steel installed in the flow direction. The warranty will otherwise become void!

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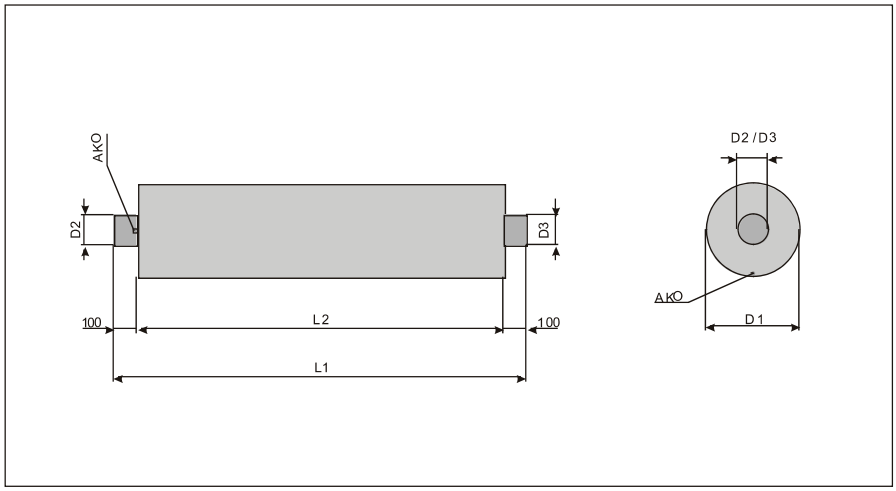

Fig. 4 Dimensions and connections of the exhaust silencer for a CHP module

Secondary exhaust silencer		CHP module type				
		EM-18/36	**EM-50/81 EM-70/115 BM-36/66 BM-55/88**	**EM-140/207 BM-98/150 BM-123/177**	**EM-199/263 EM-199/293 EM-238/363 BM-190/238**	**EM-363/498 EM-401/549 BM-366/437**
L_1	mm	1,500	2,000	2,200	2,000	2,400
L_2	mm	1,300	1,800	2,000	2,000	2,200
Ø D_1	mm	237	356	457	508	606
Ø D_2	DN	50	80	125	150	200
Ø D_3	DN	50	80	125	150	200
AKO[1)]		½"	½"	¾"	¾"	¾"
Weight	kg	40	65	105	120	170
Material		Stainless steel 1.4571	Stainless steel 1.4571	Stainless steel 1.4571	Stainless steel 1.4571	Stainless steel 1.4571
Pressure stage max.	Pa	5,000	5,000	5,000	5,000	5,000

[1)] *Condensate drain connection*

Tab. 2 Dimensions of the exhaust silencer for a CHP module

Exhaust sound pressure level at 1 m distance in the open to DIN 45635 1)	CHP module type						
	EM-18/36	**EM-50/81**	**EM-70/115**	**EM-140/207**	**EM-199/263 EM-199/293**	**EM-238/363**	**EM-363/437 EM-401/549**
dB(A)	46	41	47	57	75	72	74
Exhaust pressure drop in silencer	< 2 mbar	< 2 mbar	< 2 mbar	< 4 mbar	< 4 mbar	< 4 mbar	< 4 mbar

[1)] *Tolerance to given levels 3 dB(A); relative to an exhaust silencer. Exhaust air noise measured 1 m downstream of duct with silencer hood and fan*

Tab. 3 Residual exhaust sound pressure level with exhaust silencer

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5 Heating

5.1 Higher heating water return temperatures

Article number	CHP module type	ESS	Viessmann
	EM-50/81, EM-70/115	710-00-0035	7417749
	EM-140/207	710-00-0036	7417750
	EM-238/363	710-00-0037	7417751

Version Equipped with larger heat exchanger and if required matched cooling water pump

Function Higher heating water return temperatures 90 / 75 °C, e.g. for operation with an absorption cooling system

- **Please note:** Heating output reduced by 5 % with the same energy usage
- **Please note:** After inspection, there may be additional maintenance costs due to the thermal load of the engine oil

Delivery Fitted in the CHP module

5.2 Heating water temperature control

Version See Viessmann catalogue

Function See Viessmann catalogue

The Vitobloc 200 contains a controller with a continuous output signal 0..10 V as standard. Via an on-site mixing valve with servomotor, it regulates either the heating water return temperature or an on-site variable speed heating water pump for a constant flow temperature.

Note Biogas modules should always be fitted with a heating water return temperature raising facility!

Note for mixer

$$k_{vs} = \frac{\dot{V}}{\sqrt{\Delta p}}$$

kvs *Valve flow rate at 100 % lift*

$\dot{V}$ *Heating water flow rate*

Δp *Pressure drop*

	CHP module type			
	EM-50/81 EM-70/115 BM-36/66 BM-55/88	**EM-149/207 BM-98/150 BM-123/177**	**EM-199/263 EM-199/293 BM-190/238 EM-238/363**	**EM-363/498 EM-401/549 BM-366/437**
Three-way valve body	Internal diameter DN 40 threaded connection with fitting PN 16 k_{VS} value 25 m^3/h	Internal diameter DN 50 Flange PN 16 k_{VS} value 40 m^3/h	Internal diameter DN 65 Flange PN 16 k_{VS} value 63 m^3/h	Internal diameter DN 80 Flange PN 16 k_{VS} value 180 m^3/h

Tab. 4 Sizing the components in the heating water return temperature raising assembly

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5.3 Heating water connection set

Version See Viessmann catalogue

Note To complete the heating water connection set, the installation of a heating water pump is additionally required. It should be sized on site to the required delivery head (and possibly delivery flow rate). (For a recommendation for heating water pump sizing, see 0). If using a variable speed pump, an input signal of 0-10V is required if the return temperature raising facility is not used.

The shut-off valves for Vitobloc 200 EM-238/363, EM-363/498, EM-401/589 and BM-366/437 should be ordered separately:

EM-238/363	2 shut-off valves DN 65
EM-363/498, EM-401/589, BM-366/437	2 shut-off valves DN 80

Heating water connection set	**Viessmann article no. corresponding to CHP type**					
	EM-18/36	EM-50/81 EM-70/115 BM-36/66 BM-55/88	EM-149/207 BM-98/150 BM-123/177	EM-199/263 EM-199/293 BM-190/238	EM238/363	EM-363/498 EM-401/549 BM-366/437
Part no.	Z007326	Z007327	Z007328	Z007328	Z007329	Z008582
Standard delivery						
Expansion vessel	9572214	9572214	9572212	9572212	9572215	9572904
Cap valve	9572213	9572213	9572213	9572213	9572213	9572213
Fitting block with pressure gauge	7188380	7188380	7188380	7188380	7188380	7188380
Retainer	9572216	9572216	—	—	—	—
Safety valve	9572222	9572222	9572226	9572991	9572991	9572992
Thermometer	2 x 9034009	2 x 9034009	2 x 9034009	2 x 9034009	2 x 9034009	2 x 9034009
Shut-off valves	2 x 9572262	2 x 9572263	2 x 9572264	2 x 9572264	—	—
Drain	7143894	7143894	7143894	7143894	7143894	7143894

Tab. 1 Article numbers of components in the heating water connection set in the Viessmann catalogue

Module details	**CHP module type**						
	EM-18/36	EM-50/81 BM-36/66	EM-70/115 BM-55/88	EM-140/207 BM-98/150 BM-123/177	EM-199/263 EM-199/293 BM-190/238	EM-238/363	EM-363/498 EM-401/549 BM-366/437
Temperature delta in K	15	20	20	20	20	20	20
Flow rate in m³/h	2.1	3.5	4.9	8.9	12.6	23.5	15.6
Connection	DN 25	DN 40	DN 40	DN 50	DN 65	DN 65	DN 80
Pressure drop in m*	4	6	6	7	9	9	9
Pump recommendation							
Manufacturer	Grundfos	Grundfos	Grundfos	Grundfos	Grundfos	Grundfos	Grundfos
Type	Magna 25-60	Magna 32-100	Magna 32-100	Magna 40-120	Magna 50-120	Magna 50-120 F	Magna 65-120 F
Int. diameter	DN 25	DN 32	DN 32	DN 40 (32)	DN 50	DN 50	DN 65
Voltage in V	230	230	230	230	230	230	230
Delivery head range in m	0.5..6	0.5..11.5	0.5..11.5	0.5..12.5	0.5..13	0.5..13	0.5..13
Flow rate range in m³/h	0..8.5	0..11.5	0..11.5	0..22.5	0..32	0..32	0..38
Delivery head at CHP nominal flow rate in m at speed stage	only variable speed	7.5 1	7.5 1	7.5 2	9.5 3	10.5 variable speed	12.0 variable speed

** Including plate heat exchanger, return temperature raising facility, heat meter, dirt trap, connectors, shut-off valves etc. (guide values)*

Tab. 2 Recommendation for heating water pump sizing

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Ventilation

5.4 Ventilation air via silencer hood

Article number	Consec. posn	CHP module type	ESS	Viessmann
	6.1.1	EM-50/81, EM-70/115, BM-36/66, BM-55/88	710-00-0046	7411194
	6.1.2	EM-140/207, BM-98/150, BM-123/177	710-00-0047	7411195

Function

- Separate supply of cooling air with raised flow rate

Version

- CHP module sealed against ingress of ambient air from within the plinth.
- For the ventilation air, a corresponding aperture is provided at the top of the module at the front.
- **Please note:** Subject to the length of the duct, a separate ventilation air fan may be required. The permissible over- and underpressure within the silencer hood must not exceed 1 mbar
- **Aperture dimensions**

EM-50/81, EM-70/115, BM-36/66, BM-55/88	340 x 680 mm
EM-140/207, BM-98/150, BM-123/177	530 x 680 mm

Delivery

Fitted in the CHP module

5.5 (Extract) fan box on silencer hood

Article number	Consec. posn	CHP module type	ESS	Viessmann
	6.2.1	EM-50/81, EM-70/115, BM-36/66, BM-55/88	710-00-0048	7411196
	6.2.2	EM-140/207, BM-98/150, BM-123/177	710-00-0049	7411197

Function

The conditions at the installation location may make it necessary to position the fan box on the top of the CHP module silencer hood.

Version

For a fan mounted on the top of the silencer hood, an additional reinforcement and a new rear cover panel are required.

Delivery

Installed in the CHP module, option for transportation as loose, fully wired accessories (if confirmed in the order)

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5.6 Recirculating air damper

5.6.1 Recirculating air damper in profiled fitting for EM-18/36

Article number	CHP module type	ESS	Viessmann
	EM-18/36	710-00-0030	7411175

Function

The recirculating air damper is used for room heating with warm extract air. On a controller, any temperature from 10 to 35 °C can be set. Subject to room temperature, the damper servomotor constantly opens or closes the louvre damper to regulate the set temperature.
Please note: In Germany, in accordance with the occupational safety directive, extract air must not be routed into workrooms or other rooms people have access to!
Please note: If installed upstream of the optional extract air damper, machine/fan noise in the installation room will be without attenuation!

Version

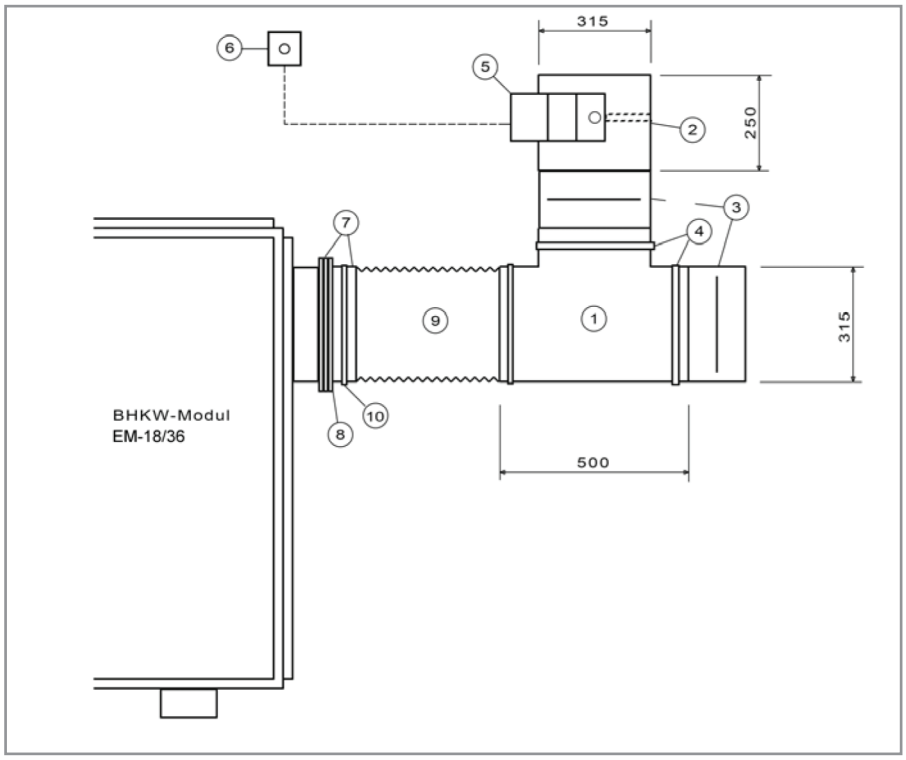

Fig. 5 Connection of the recirculating air damper to a CHP module EM-18/36

1 Branch 90° ID 315 mm, length 500 mm
2 Shut-off damper ID 315 mm, length 250 mm
3 Female connections
4 Fixing clamps 315 mm
5 Damper servomotor
6 Control unit with temperature sensor
7 Flanged collar ID 315 mm (module connection)
8 Plain flange ID 315 mm (module connection)
9 Hose ID 315 mm, length 500 mm (flexible connector)
10 Hose clip

- Pos. 7, 8 and 9 are part of the standard delivery of the CHP module
- Pos. 4 and 10 on site
- On-site requirements: 230 V supply

Delivery As loose accessories for on-site installation

5368 463

5.6.2 Recirculating air damper for modules EM-50/81 and EM-70/115

Article number	CHP module type	ESS	Viessmann
	EM-50/81, EM-70/115	710-00-0031	7411176

Function

The recirculating air damper is used for room heating with warm extract air.
On a controller, any temperature from 10 to 35 °C can be set. Subject to room temperature, the damper servomotor constantly opens or closes the louvre damper to regulate the set temperature.
Please note: In Germany, in accordance with the occupational safety directive, extract air must not be routed into workrooms or other rooms people have access to!
Please note: If installed upstream of the optional extract air damper, machine/fan noise in the installation room will be without attenuation!

Version

Standard delivery:

1 pce	Shut-off damper ID 370 x 370 mm, 120 mm deep
1 pce	Protective grille 370 x 370 mm P20
1 pce	Damper servomotor
1 pce	Control unit with temperature sensor

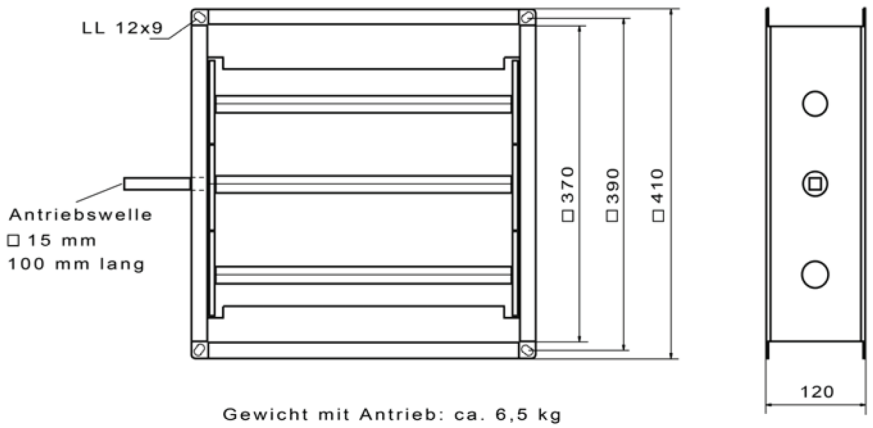

Abb. 6 Recirculating air damper for modules EM-50/81 and EM-70/115

- On-site requirements: 230 V supply

Delivery

As loose accessories for on-site installation

5368 463

5.6.3 Recirculating air damper for modules EM-140/207 to EM-401/549

Article number	Consec. posn	CHP module type	ESS	Viessmann
	6.3.3.1	EM-140/207	710-00-0032	7411177
	6.3.3.2	EM-199/263, EM-199/293, EM-238/363 EM-363/498, EM-401/549	710-00-0033	7411178

Function

The recirculating air damper is used for room heating with warm extract air.
On a controller, any temperature from 10 to 35 °C can be set. Subject to room temperature, the damper servomotor constantly opens or closes the louvre damper to regulate the set temperature.
Please note: In Germany, in accordance with the occupational safety directive, extract air must not be routed into workrooms or other rooms people have access to!
Please note: If installed upstream of the optional extract air damper, machine/fan noise in the installation room will be without attenuation!

Version

Standard delivery:

1 pce	Shut-off damper ID 545 x 545 mm, 110 mm deep
1 pce	Protective grille 545 x 545 mm P20
1 pce	Damper servomotor
1 pce	Control unit with temperature sensor

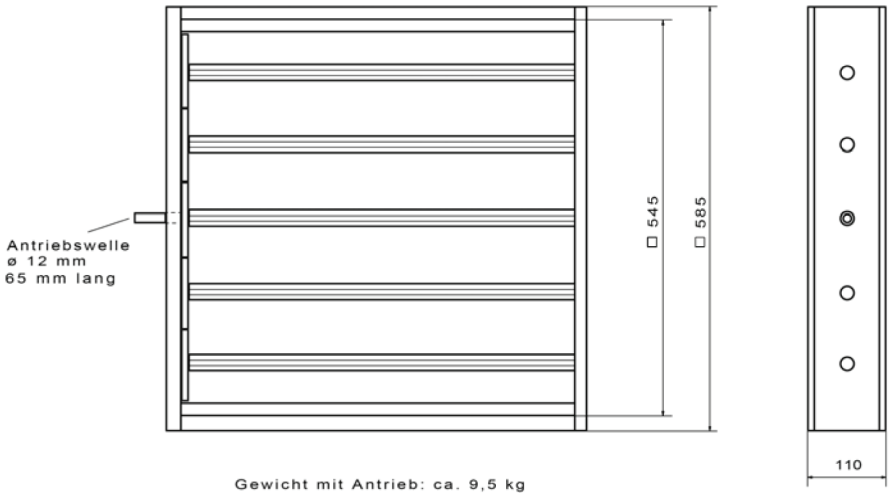

Fig. 7 Recirculating air damper for modules EM-140/207, EM-199/263, EM-199/293 and EM-238/363

- On-site requirements: 230 V supply

Delivery

As loose accessories for on-site installation

5368 463

6 Electronics

6.1 Data BUS systems / interfaces (gateway)

Article number	CHP module type	ESS	Viessmann
	for all CHP module types	710-00-0054	7411201

Function Computer connection according to requirements on site

Version Plug-in module instead of RS232 with protocol 3964

Possible interfaces
- Gateway RK 512
- Gateway ProfiBus DP slave connection
- Gateway LON BUS connection
- Gateway CANopen connection
- Gateway MOD BUS connection
- Gateway with DK3964 R multi-module systems

Delivery Fitted in the CHP module

Note As part of order processing, the client should provide precise details about the protocol and data interface to be set up.

6.2 Options for power failure

6.2.1 Equipment level to VDE 0108 for emergency power mode

Article number	CHP module type	ESS	Viessmann
	EM-50/81, EM-70/115, EM-140/207	710-00-0055	7411179
	EM-238/363	710-00-0056	7411180

Function The module automatically recognises the power failure and disconnects from the mains.
After on-site load shedding of all consumers not eligible for emergency power, and opening of the on-site mains coupling switch, the module can switch to emergency power. After restoration of the power supply and a brief power steadying phase, the module is shut down and the on-site mains coupling switch is closed. The module then runs according to standard mode.
As heat is still generated in emergency power mode, adequate provision must be made to transfer this heat and, if necessary, supply a cooling system or buffer cylinder.

Version Equipment level for operation to VDE 0108, comprising
- Batteries to VDE 0510 part 2
- Independent battery voltage monitor
- Key switch for test run
- Key switch for power failure simulation
- Incl. configuration expenditure
- Additional zero volt message contacts for parallel mains mode and emergency power mode

Note:
The standard emergency power mode (without equipment level to VDE 0108) is included in the Vitobloc standard delivery.

Delivery Fitted in the CHP module

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6.2.2 Uninterruptible reverse synchronisation

Article number	CHP module type	ESS	Viessmann
	All CHP module types	710-00-0057	7411204

Function

After power is restored following a power failure and CHP emergency power mode stops, the module is automatically resynchronised to the public grid, as long as the on-site mains isolator is able to perform synchronisation.

Power failure

The mains isolator is open, the CHP module operates in isolated mode

Power supply restoration

After the mains stabilising time has expired, the synchroniser receives the "enabled for synchronising" signal.

The synchroniser compares the actual "mains voltage" with the "generator voltage" or the "busbar voltage" and regulates the CHP module speed via the "higher/lower" adjusting pulses.

If the voltage, frequency and phase angle differential are within the permissible limits, then the start pulse to the mains isolator is issued.

After switching and feedback (mains isolator is ON), the CHP module automatically enters "parallel mains mode".

Provide this control for every module; the load stages are managed on site.

The uninterruptible reverse synchronisation is commissioned and the safety interlocks within the modules are disabled on site.

Additional option:

Uninterruptible emergency power supply when the machine is running with optimised load (consumer load lower than module output) available on request; load stages are managed on site.

Standard delivery

- In separate wall mounted casing

Control panel:	500 x 500 x 210 mm (H/W/D)
IP rating:	IP 41
Colour:	RAL 7035
Max. ambient temperature:	45 °C
Max. relative humidity:	70 %
VDE:	0660/500
Cable entry:	below
Door hinges:	on left

- With the following integral parts:

  Fuse 24 VDC (power supply from module control field)
  Fuse 400 V mains voltage
  Fuse 400 V busbar voltage
  Synchroniser SYN
  Time relay
  2 pce Fleeting relay
  5 pce Control relay
  Control panel complete with all necessary fuses and relays, wired to terminals ready for connection.

  On-site requirements:

- Synchronising mains isolator with
  - Motor storage drive 24 VDC
  - Switch-on coil 24 VDC
  - Trip coil 24 VDC
  - Feedback contacts (actual ON / actual OFF)
- Mains test voltage output 400 V / 6 A upstream of mains isolator
- Sufficient cable (cross-section of the 24 VDC cables)
  In case of problems such as
  - large distances between the CHP and mains isolator
  - high current drawn by the motor drive
  - high currect drawn by the switch-on/trip coils

  a separate on-site buffer voltage 24 VDC must be provided.

Delivery

As loose accessories for on-site installation

5368 463

6.3 TeleControl remote monitoring

On-site requirements At least an analogue landline, no extension(!), as an option an ISDN connection as well; to be provided on site.

Specification This accessory has a separate detailed specification.

Delivery As loose accessories for on-site installation in a separate wall mounted casing; with module EM-238/363, optional integration in the module

6.3.1 Telecontrol Light for single module systems

Article number	CHP module type	ESS	Viessmann
	for all CHP module types	710-00-0021	7411190

Function

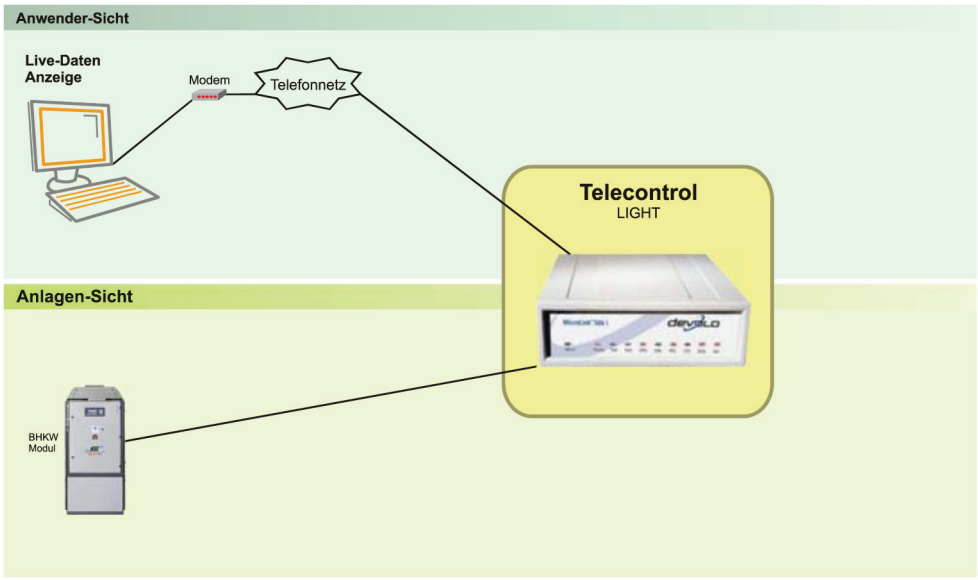

Fig. 8 Telecontrol Light function diagram

The **Telecontrol Light** is only used to view current live online data for the CHP module on the PC.

► There is no longer-term data recording for representation on graphs

► No fault messages can be sent as SMS, fax or email

► Only one module can be selected

Note Due to varying telecommunications standards, only enabled for Germany!

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6.3.2 Telecontrol Light for single module systems

Article number	CHP module type	ESS	Viessmann
	for all CHP module types	710-00-0022	7411187

Function

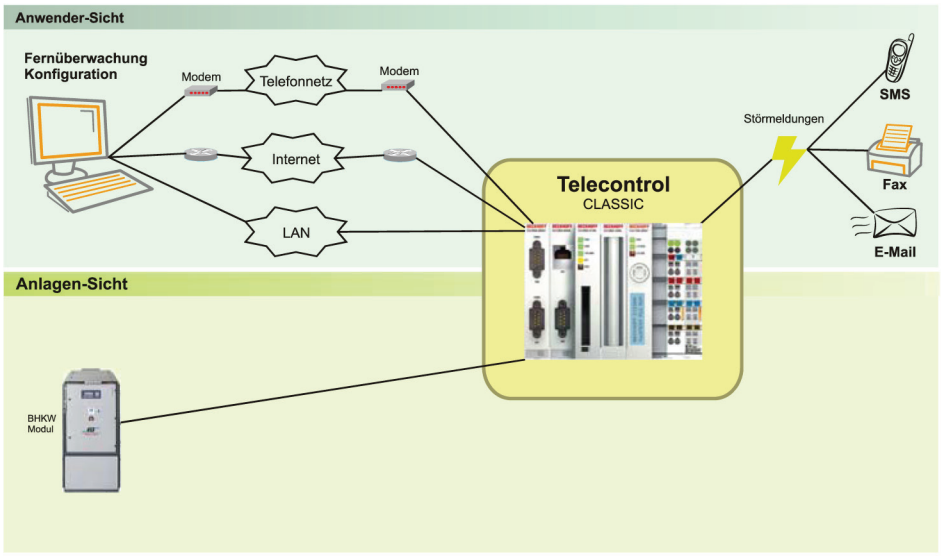

Fig. 9 Telecontrol Classic function diagram

In the **Telecontrol Classic** version, the following functions are available:

- ► Up to one CHP module can be selected
- ► Hourly, daily and annual rates can be shown on graphs
- ► The graphs are specified at the factory and cannot be changed
- ► Display of the current status of the system (online live data view)
- ► Transmission of fault and maintenance messages by fax, SMS or email

Note

Due to varying telecommunications standards, only enabled for Germany!
For other countries on request.

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6.3.3 Telecontrol Exclusive

Article number	CHP module type	ESS	Viessmann
	for all CHP module types	710-00-0023	7411189

Function

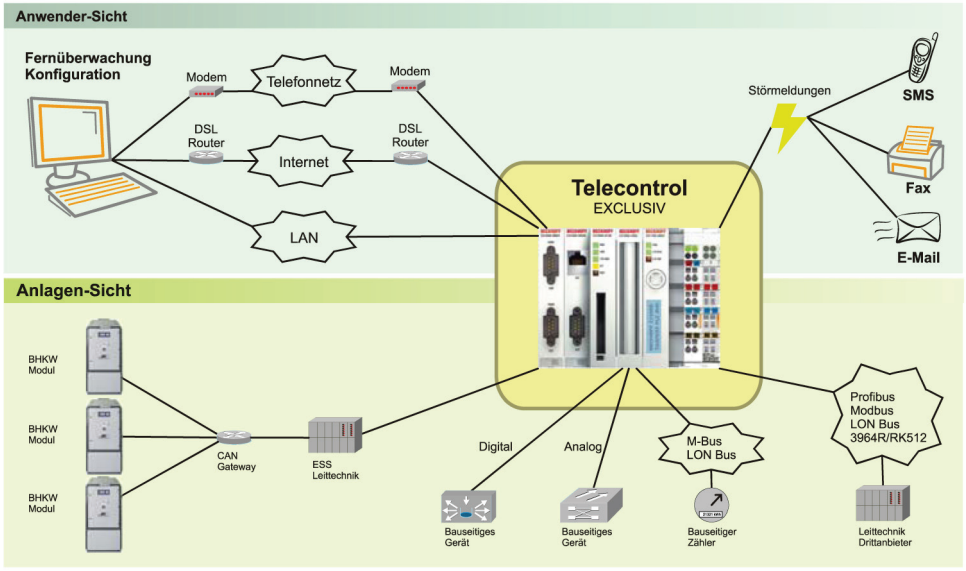

Fig. 10 Telecontrol Exclusive function diagram

The **Exclusive version** is required if a host is available in the system whose analogue values, fault messages and operating messages are also recorded and could be depicted on graphs.
Functionality as per Telecontrol Top version with the following extensions:

- ► Recall function
- ► Can connect to the internet via DSL (DSL connection must be available in the CHP system)
- ► Data export to Excel or as ASCII file
- ► Additional digital and analogue input/output cards can be connected, for example to connect on-site temperature sensors
- ► In addition, the following optional functions are possible:
- ► LON BUS connection to select the Telecontrol via a higher ranking management system
- ► M BUS to select up to three heat meters
- ► OPC-Server: if a visualisation is already available, module data can be read by the OPC server and made availabe to the third party system for further processing

Note

Due to varying telecommunications standards, only enabled for Germany!
For other countries on request.

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6.3.4 Telecontrol GPRS for single module systems

Article number	CHP module type	ESS	Viessmann
	for all CHP module types	710-00-0059	7417756

Function

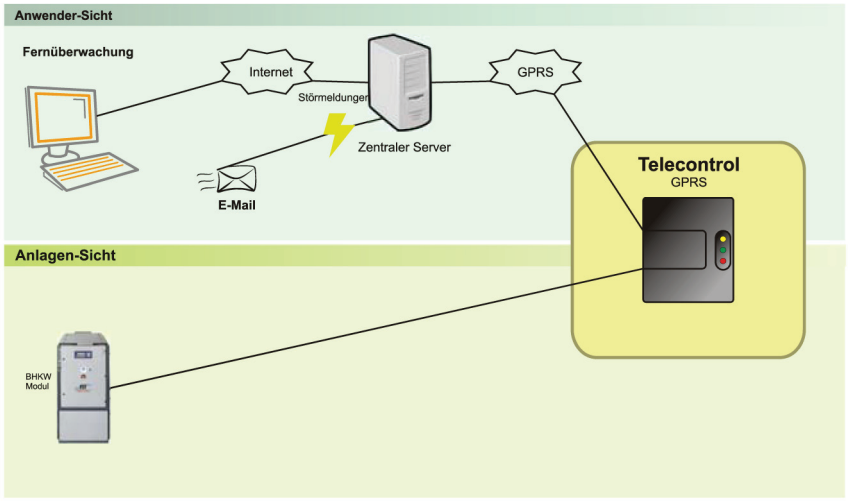

Fig. 11 Telecontrol GPRS function diagram

- ► Access to the recorded data via D1 mobile network
- ► Up to one CHP module can be selected
- ► Module data recording every minute for 1 year
- ► Additional recording of module data if status changes
- ► Message list with display of module values at the moment of status change
- ► Display of the recorded module values on a line graph
- ► Line graphs are freely adjustable
- ► Fault message transfer by email

On-site requirements

For every CHP module whose data must be made available, the following requirements are necessary:
1. Telecontrol GPRS modem hardware
2. Guaranteed reception of the D1 mobile network at the installation location!
Note:
Note the maximum cable lengths when selecting the installation location as well as the quality of reception of the mobile network. As an aid to determining the area with the highest field strength around the installation location, a mobile phone with a D1 card can be used.
3. D1 mobile phone card with tariff for GPRS data transmission with data flat rate, without volume restriction and deactivated PIN scan
Note:
After the customer has purchased and enabled the D1 SIM card, the mobile phone card is checked and configured together with the modem hardware by ESS. Perfect operation cannot be guaranteed in different regional areas.

Requirement for commissioning

Written declaration of consent from the owner or CHP operator for external data transmission (as per the German Federal Data Protection Act)

Operating costs

- ► Annual service charge €120 (from year 2)
- ► Setting up additional users, €200 per user

Delivery

Integration in the module control panel

Note

Due to varying telecommunications standards, only enabled for Germany!

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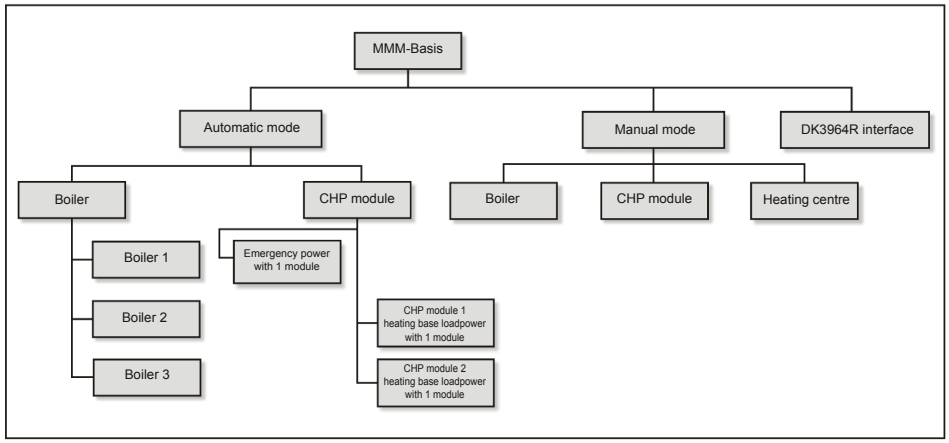
6.4 Management system for multi-module management

Article number	CHP module type	ESS	Viessmann
	for all CHP module types	710-00-0020	7411185
Specification	This accessory has a separate detailed specification.		

Function



The MMM multi-module management system is a universal management architecture for energy-producing systems, particularly those that generate heat and power.
In electrical mains parallel mode, the MMM controls up to 2 CHP modules and 3 boilers, where the CHP modules are used to cover the heating base load.
The MMM-Basis comprises the following functions:

- Boiler in automatic mode
  Boilers are selected and deselected subject to freely adjustable limits. In addition, every limit can have a nominated PT100 temperature sensor, subject to which the selection or deselection will take place. Up to 4 PT100 temperature sensors can be connected in the MMM-Basis.
  The selection and deselection can take place subject to temperature, where corresponding heating curves are configured via the display. The boilers can be equipped with single or two-stage burners. The order for selection and deselection can take place subject to the boiler hours run or by programming a boiler sequence.
  In the MMM-Basis, the boiler output can be regulated via "higher/lower" pulses.
- CHP in automatic mode / heating base load
  The CHP modules should primarily cover the heating base load. For this, the two CHP modules are selected and deselected subject to freely adjustable limits. Any limit can be assigned a sensor.
  In the MMM-Basis, there are up to 4 temperature sensors to choose from. This means cylinder control is already possible in the MMM-Basis. However, it should be noted that to select and deselect boilers (if installed), temperature sensors are a prerequisite and therefore not all 4 temperature sensors can necessarily be used.
  The boilers are only started subject to demand if the heat from the CHP module is no longer sufficient to cover demand.
- Emergency power mode
  In the MMM-Basis, up to one CHP module can be selected in emergency power mode.
- Manual level
  A manual level is integrated into the MMM with which all connected assemblies (e.g. boiler, CHP modules, system periphery such as boilers, pumps, control valves etc.) can be controlled manually.
- DK3964R interface for management system or Telecontrol
  A serial interface enables the connection of a higher ranking management system or Telecontrol remote monitoring by ESS. All available measured and control data is made available for transmission. The computer connection for the transfer of the required data should be implemented on site in accordance with the installed hardware.

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Version

The MMM-Basis can be supplied either installed in a wall mounted casing or on a mounting plate (for installation in a separate control panel – not for the CHP control panel).

Optional versions and functions (on request)

- **OPTION MMM Control panel version**

  For the installation of further MMM options, additional space is required:
  Control panel 2000 x 800 x 600 mm with plinth
  Power supply unit 24 VDC

- **OPTION MMM Controller assembly with 4 controllers**

  E.g. for boiler return temperature raising facility / boiler low end temperature, or heating circuit control unit / DHW heating system

  Control valve regulation according to freely adjustable temperature or set value calculated from two temperatures (flow temperature/outside temperature), including regulation of one pump per control circuit.

  For the controller assembly with 4 controllers, a total of 4 analogue and 8 digital outputs are available. For example, the boiler return temperature raising facility thus ensures a freely adjustable internal minimum boiler water temperature. In addition, a boiler low end temperature control can ensure that the internal boiler water temperature does not fall below an adjustable "low end temperature" limit. As a further possible application, with an auxiliary assembly up to four heating circuits can be controlled subject to the outside temperature. Alternatively, a primary store system for DHW heating can be controlled and regulated.

- **OPTION MMM Modulating operation (for up to 2 boilers)**

  This optional controller assembly is required for modulating control via an analogue 0 - 10 V signal.

- **OPTION MMM Cylinder control**

  In the MMM-Basis, 4 temperature sensors are already available. This means it is already possible in the Basis version to achieve simple cylinder control. However, it may be that not all temperature sensors can be used for cylinder control. If the 4 temperature sensors in the Basis are insufficient, 4 additional PT100 temperature sensors can be connected via an auxiliary assembly.

- **OPTION MMM Control of the residual power to be drawn from the mains**

  In this operating mode, CHP modules are selected and deselected subject to an on-site residual mains signal 0 - 10 V or 0 - 20 mA. The CHP modules are modulated between 50 % and 100 % in order to use as little mains power as possible.

- **OPTION MMM Load shedding for power failure (up to 16 stages)**

  If there is a power failure, up to 16 load stages can be enabled for emergency power mode.
  Enabling these load stages ensures that no loads are hooked up to the CHP module or modules at an unfavourable time.
  Please note: a separate control panel extension is required for this option!

- **OPTION MMM Emergency power mode with 2 CHP modules with active load distributor**

  If more than one CHP module should be selected in emergency power mode, the active load distributor option is required. In emergency power mode, the active load distributor ensures even load distribution to both CHP modules. The current transformers are installed in the optional link-up facility. The wiring to the MMM panel should be installed on site.
  Please note: a separate control panel extension is required for this option!

- **OPTION MMM Additional auxiliary drive**
  Fuse outlet 400 V / 16 A
  (e.g. for boiler) incl. installation
  Please note: a separate control panel extension is required for this option!

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Optional versions and functions

- **OPTION MMM Additional auxiliary drive**
  Fuse outlet 230 V / 16 A (e.g. for boiler) incl. installation
  Please note: a separate control panel extension is required for this option!

- **OPTION MMM Additional auxiliary drive**
  Pump control up to 4 kW
  Please note: a separate control panel extension is required for this option!

- **OPTION MMM Databus connection LON BUS** **alternative**
  OPTION MMM Databus connection ProfiBus DP slave **alternative**
  OPTION MMM Databus connection CANopen BUS **alternative**
  OPTION MMM Databus connection MODBUS BUS
  Computer connection in each case according to requirements on site

- **OPTION MMM Remote monitoring / actual data capture with Telecontrol "Exclusive"**
  Remote monitoring and actual data capture takes place via an external appliance, the so-called Telecontrol. The Telecontrol is connected to the MMM via a serial interface. Using the associated visualisation software, it is possible to dial into the system remotely via the telephone network.
  The Telecontrol is available in four different version (see separate Telecontrol Specification). To connect the Telecontrol to the MMM, the "Exclusive" version is required.
  The following functions are implemented in the "Exclusive" Telecontrol version:
  - Sending messages if there is a fault (SMS, fax, email)
  - These messages can be programmed to be allocated to certain people. For example, CHP faults can be sent to different people than general boiler or system faults.
  - Data recording of all CHP values and up to 16 analogue values from the MMM. The data is depicted on freely configurable graphs.
  - Long-term fault message history
  - Long-term operating message history
  - Establishing user profiles to save individual settings
  - Once a user has registered with the Telecontrol and set up a graph according to their individual criteria, the same graph can be viewed again on another PC without having to reconfigure it.

  Please note: a separate control panel extension is required for this option!

Delivery

As loose accessories for on-site installation

5368 463

6.5 Control units

6.5.1 Cylinder level control unit SFR

Article number	CHP module type	ESS	Viessmann
	for all CHP module types	710-00-0060	7424555

Function

Cylinder level control unit SFR to select or deselect a CHP module

Capture:

At the SFR control unit, the top and bottom PT100 sensors of the buffer cylinder are captured, assessed and displayed.

Module selection:

To select the module, the switching point and time delay can be selected for the top and bottom cylinder sensors.

If the temperatures in the cylinder fall below both switching points (cylinder empty), the CHP module is selected.

If the upper switching point is exceeded, the module remains operational until the lower switching point has also been exceeded (cylinder full). Only then is the CHP module deselected.

The module then remains deselected until the temperatures fall back below both cylinder sensor limits.

Pump selection:

With the upper cylinder sensor, the cylinder discharge is also controlled.

If a set temperature is exceeded, the cylinder discharge pump is selected.

If the temperature falls below the switching point of the upper cylinder sensor, the pump is stopped.

This prevents cold cylinder water being pumped into the heating flow.

Boiler block:

A possible option, if the upper cylinder sensor has exceeded a certain temperature (cylinder full), is to then block the boiler via a zero volt contact so that the available heat is also drawn from the cylinder.

If the temperature falls below the set value again (cylinder empty), the boiler is re-enabled after an adjustable delay.

All values and time delays are freely adjustable.

Standard delivery

- Cylinder level control unit SFR in separate wall mounted casing
  Control panel: 380 x 380 x 210 mm (H/W/D)
  IP rating: IP41
  Colour: RAL 7035
  Max. ambient temperature: 45 °C
  Max. relative humidity: 70 %
  VDE: 0660/500
  Cable entry: below
  Door hinges: right
- Delivery of loose accessories:

2 PT100 sensors 220 mm with sensor well 1/2"
(power supply from module control field)

Control panel complete with all necessary fuses and relays, wired to terminals ready for connection.
The wiring required between control unit and PT100 sensors is installed on site.

On-site requirements:

- 1/2" female connection: cylinder top
- 1/2" female connection: cylinder bottom

Delivery

As loose accessories for on-site installation

Note

For further information and diagrams, please see the "Technical series natural gas CHP project management".

5368 463

6.5.2 Load controller

Article number	CHP module type	ESS	Viessmann
	For all CHP module types except EM-18/36	710-00-0053	7411205

Function

Load controller to prevent electrical power being fed into the public grid when a CHP module is being operated in mains parallel mode.
Power modulation:
A value for the power still to be drawn from the public grid can be freely entered.
The CHP module generates power and heat simultaneously. During power modulation there may be insufficient or excess heat.
With an adjustable start threshold (e.g. load 60 kW_{el}), the CHP module is selected via a zero volt contact.
The module is subsequently regulated to the set minimum load (e.g. 10 kW_{el}), using a default value (0 - 20 mA equates to 50 - 100 % electrical module output).
The digital display shows the current load (e.g. 10 kW_{el}), the actual output demand (e.g. 60 kW_{el}) and the module default value (e.g. 50 kW_{el}).
If the load drawn from the grid increases (actual output demand), the module is modulated up to the maximum output. If the load drawn from the grid drops, the module output is reduced down to the minimum output (50 %) and shut down at an adjustable stop threshold (e.g. load 30 kW_{el}).
Please note that values below the minimum output value (50 %) cannot be regulated.
Furthermore, please note that a minimum load drawn from the grid or a minimum control grid feed-in is always selected. If the module is regulated to exactly zero grid load, a "mains power failure" can no longer be detected and at "power supply restoration", this would lead to asynchronous control.

Standard delivery

- Load controller in separate wall mounted casing

Control panel:	300 x 300 x 210 mm (H/W/D)
IP rating:	IP41
Colour:	RAL 7035
Max. ambient temperature:	45 °C
Max. relative humidity:	70 %
VDE:	0660/500
Cable entry:	either top/bottom right
Door hinges:	right

- With the following integral parts:
  PLC standard module with digital and analogue I/O module and internal control terminal
  Fuse 24 VDC
  Isolating amplifier for separating the on-site load signal
  Interface relay to enable module selection
  (Power supply 24 VDC from module control field)

Control panel complete with all necessary fuses and relays, wired to terminals ready for connection.
The wiring required between control unit and load signal is installed on site.

On-site requirements:

- Load signal - x kW to + y kW equates to 0 - 20 mA
  or 4 - 20 mA
  or 0 - 10 V

(The values x and y can be freely selected according to on-site conditions or requirements.)

Delivery

As loose accessories for on-site installation

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7 Service and training

7.1 Service

7.1.1 Commissioning (in Germany)

Article number	CHP module type	ESS	Viessmann
	EM-18/36, EM-50/81, EM-70/115, EM-140/207	900-00-0003	7427768
	EM-199/263, EM-199/293, EM-238/363, EM-363/498, EM-401/549	900-00-0004	7427769
	BM-36/66, BM-55/88, BM-98/150, BM-123/177, BM-190/238, BM-366/437	900-00-0005	7000763

Scope of service

- Completion of the system includes commissioning and adjusting the system as well as training the client's operating personnel.
- The required process materials are provided by the client. A list of the lubricants approved by the CHP manufacturer and other regulations for process materials is included with the quotation.
- The client must be prepared to meet all requirements to ensure trouble-free commissioning and safe ongoing operation. In particular, the client should ensure the provision of energy and process materials in accordance with the CHP manufacturer's specifications for process materials, as well as the smooth transfer of the power and heat generated.
- The operating personnel is available for instruction and assistance at no extra cost.
- Commissioning is completed with the handover of the system to the client. The operating risk transfers to the client with this handover. No later than when it delivers an economical benefit will the system be deemed to have been handed over.
- Should a separate journey to site be required through on-site delays, e.g. due to acceptance by the power supply utility, test body or similar, such additional costs can be invoiced.

Note

The readiness for commissioning should be advised in writing approx. 2 to 4 weeks prior to the required date using the registration form to be sent to the service centre in Landsberg.

Order processing support (international)

In other countries according to costs plus travel expenses beyond the German border upon production of receipts plus 10 % handling fee (+ art. no. 7428872)

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7.1.2 Lubricant TANK initial fill

Article number

CHP module type	ESS	Viessmann
EM-18/36	710-00-0007	7000071
EM-50/81, EM-70/115, EM-140/207	710-00-0010	7000072
EM-199/263, EM-199/293, EM-363/498, EM-401/549	710-00-0011	7000073
EM-238/363	710-00-0012	7000074
BM-36/66, BM-55/88, BM-98/150, BM-123/177	710-00-0009	7000075
BM-190/238, BM-366/437	710-00-0011	7000073

Natural gas CHP module with naturally aspired engine

- Delivery of synthetic gas engine lubricant for operation with natural gas (according to the CHP module manufacturer's approval list)
- Initial filling of the lubricant tank integrated into the CHP module (engine lubrication oil sump initial filling included as standard)
- Volume of oil provided per module:

EM18/36	1 container per 20 litres
EM-50/81, EM-70/115, EM-140/207	3 containers per 20 litres
EM-238/363	10 containers per 20 litres

Natural gas CHP module with turbo engine and biogas CHP module

- Delivery of mineral gas engine lubricant for operation with natural gas and biogas (according to the CHP module manufacturer's approval list)
- Initial filling of the lubricant tank integrated into the CHP module (engine lubrication oil sump initial filling included as standard)
- Volume of oil provided per module:

EM-199/263, EM-199/293	10 containers per 20 litres
EM-363/498, EM-401/549	10 containers per 20 litres
BM-36/66, BM-55/88, BM-98/150, BM-123/177	3 containers per 20 litres
BM-190/238, BM-366/437	10 containers per 20 litres

Note

The engine manufacturer's approval lists differ in scope to the CHP module manufacturer's approval lists, since the engine manufacturers establish the standard lubricant oil change interval subject to the results of the relevant lubricant analyses which have to be carried out.

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7.1.3 Test run after commissioning (in Germany)

Article number	CHP module type for all CHP module types	ESS 900-00-0011	Viessmann 7000762

Scope of service
- Additional 8 h supervised test run in conjunction with commissioning
- Suitable testers to be provided on site, e.g. heat and gas meters

Test run after commissioning (international)
In other countries according to costs plus travel expenses beyond the German border upon production of receipts plus 10 %
Handling fee (+ art. no. 7000985)

7.1.4 Order processing support / installation inspection (in Germany)

Article number	CHP module type for all CHP module types	ESS 900-00-0100	Viessmann 7000780

Meeting on site (in Germany)
1 day (incl. travelling time), for example for installation inspections, site meetings, additional training, separate acceptance procedures and similar

Order processing support (international)
In other countries according to costs plus travel expenses beyond the German border upon production of receipts plus 10 % handling fee (+ art. no. 7000986)

7.1.5 Warranty preservation

Article number	CHP module type for all CHP module types	ESS 900-00-0010	Viessmann 7000779

Preservation of the CHP system (in Germany)
- Preservation to maintain the warranty
- Preservation of the CHP module on site (in Germany) 24 weeks following delivery or after 12 weeks out of use; thereafter every 24 weeks
- As part of this, every module must regularly be run on idle for a few minutes to protect the system against corrosion as a result of the relative humidity. The internal lubrication pump delivers the lubricant provided on-site, to any parts at risk, particularly to the cylinder head area.
- These tasks should be carried out by qualified specialist contractors.

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7.2 Training

7.2.1 Local operating instructions

Article number	CHP module type	ESS	Viessmann
	for all CHP module types	900-00-0006	7000759

Scope of service

- Local operating instructions for the customer CHP module as part of a service by the manufacturer or their representative
- Duration of training approx. 4 hours
- Plus travel expenses (in Germany and other countries!)

Note

In other countries according to costs plus travel expenses beyond the German border upon production of receipts plus 10 % handling fee (+ art. no. 7000988)

7.2.2 Factory training

Article number	CHP module type	ESS	Viessmann
	for all CHP module types	900-00-0007	7000776

Scope of service

- At the manufacturing site, the operating personnel should be trained for 1 day (or 2 half-days) in correct operation, handling and simple troubleshooting activities, incl. training material and drinks during breaks.
- Participation in this training course does **not** qualify participants to carry out maintenance work!
- The client bears the costs of travel, accommodation and and refreshments.

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Notes

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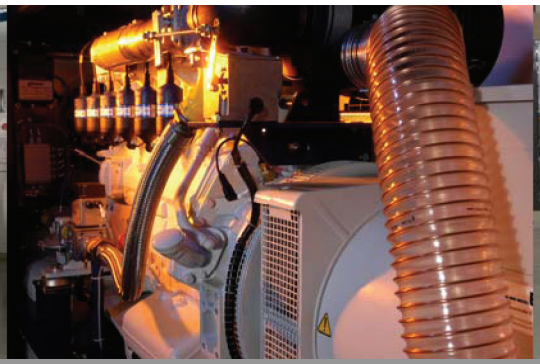

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